1. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$\log_4 (2x + 5) + 4 = 3$$

   A. $x \in [-2.34, -1.45]$

   B. $x \in [29.26, 29.94]$

   C. $x \in [-2.97, -2.09]$

   D. $x \in [2.93, 3.12]$

   E. There is no Real solution to the equation.

2. Solve the equation for x and choose the interval that contains x (if it exists).
$$11 = \ln \sqrt[3]{\frac{19}{e^{8x}}}$$

   A. $x \in [-1.6, -1]$

   B. $x \in [-3.7, -2.2]$

   C. $x \in [3.5, 4.7]$

   D. There is no Real solution to the equation.

   E. None of the above.

3. Which of the following intervals describes the Range of the function below?
$$f(x) = \log_2 (x + 7) + 7$$

   A. $(-\infty, a), a \in [-7, -5]$

   B. $[a, \infty), a \in [6, 8]$

   C. $(-\infty, a), a \in [6, 8]$

   D. $[a, \infty), a \in [-7, -5]$

   E. $(-\infty, \infty)$

4. Which of the following intervals describes the Range of the function below?
$$f(x) = -e^{x-6} + 2$$

A. $(a, \infty), a \in [-3, 0]$

B. $(-\infty, a], a \in [2, 5]$

C. $[a, \infty), a \in [-3, 0]$

D. $(-\infty, a), a \in [2, 5]$

E. $(-\infty, \infty)$

5. Solve the equation for x and choose the interval that contains x (if it exists).
$$5 = \ln \sqrt[7]{\frac{30}{e^{6x}}}$$

A. $x \in [4.27, 8.27]$

B. $x \in [-3.44, -1.44]$

C. $x \in [-2.1, 1.9]$

D. There is no Real solution to the equation.

E. None of the above.

6. Which of the following intervals describes the Domain of the function below?
$$f(x) = e^{x+4} - 3$$

A. $[a, \infty), a \in [2, 7]$

B. $(-\infty, a], a \in [-11, -2]$

C. $(-\infty, a), a \in [-11, -2]$

D. $(a, \infty), a \in [2, 7]$

E. $(-\infty, \infty)$

7. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$3^{-3x-3} = \left(\frac{1}{343}\right)^{-2x-5}$$

A. $x \in [1, 3]$

B. $x \in [-33.48, -29.48]$

C. $x \in [-2.17, -0.17]$

D. $x \in [-1.87, 1.13]$

E. There is no Real solution to the equation.

8. Which of the following intervals describes the Range of the function below?

$$f(x) = -\log_2(x+1) + 4$$

A. $(-\infty, a), a \in [-5.5, -1.1]$

B. $[a, \infty), a \in [-1.1, -0.3]$

C. $(-\infty, a), a \in [3.7, 8.4]$

D. $[a, \infty), a \in [0.7, 1.3]$

E. $(-\infty, \infty)$

9. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$4^{-4x+5} = 27^{-2x-2}$$

A. $x \in [-13.92, -10.92]$

B. $x \in [-6.69, -3.69]$

C. $x \in [0.5, 4.5]$

D. $x \in [4.76, 8.76]$

E. There is no Real solution to the equation.

10. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_4 (2x + 5) + 6 = 3$$

    A. $x \in [25.5, 31.5]$

    B. $x \in [42, 46]$

    C. $x \in [-3.49, 3.51]$

    D. $x \in [37, 41]$

    E. There is no Real solution to the equation.